PRELIMINARY COMMENTS AND QUESTIONS FROM
CENTRAL VALLEY REGIONAL WATER QUALITY CONTROL BOARD STAFF
REGARDING
TECHNICAL ISSUES COMMITTEE RECOMMENDATIONS
11 July 2006

General Comment: Many of the recommendations rely on flexibility for different alternatives and approaches to be proposed by Coalitions. While that level of flexibility may be very good, the result is that these recommendations lack specificity on which staff can provide comment. If these recommendations are utilized in a Tentative MRP, there will undoubtedly be comments from staff on proposals utilized in individual coalition MRP Plans that cannot be anticipated nor provided at this juncture.

1. RECOMMENDATION #1 – Trigger to Follow up monitoring for toxicity tests - When a "statistically significant" difference is observed for a sample at the end of an acceptable test (i.e., meets EPA test acceptability criteria), but the magnitude of the difference between the sample and the control is <20%, follow up sampling will not be required, which is consistent with the approach applied by SWAMP monitoring efforts. Samples that are "statistically significant" and that exhibit a ≥ 20% reduction in organism response compared to the control will require follow-up sampling.

Samples that exhibit a statistically significant reduction in organism response when compared to the laboratory control must still be reported to the RWQCB as an exceedance of the narrative water quality objective for toxicity testing.

Staff Comments and Questions.
- If the toxicity test does not meet some minor test acceptability criteria, but does exceed 20% in significant difference, does that mean that the Coalitions will not report and/or resample?

2. RECOMMENDATION #2 – Follow-up Monitoring for Analytical Chemistry and Bacteriological Exceedances – Language in the draft Coalition Group MRP should state: "the Coalition shall include a follow-up approach to address exceedances of receiving water limitation or water quality objectives for analytical chemistry or bacteriological data in their MRP Plan and shall implement the approach via the methods and within the timeline outlined in the individual Coalition MRP Plan approved by the Executive Officer of the Central Valley Water Board. The Coalition will continue implementing their follow-up approach until a source or sources of the water quality exceedance is identified via the methods and frequency proposed in the Coalition MRP, which may include, but is not limited to an agricultural practice, upstream identification, non-farm related activities or natural conditions."

Staff Comments and Questions:
- Can the TIC develop criteria for evaluation of a coalition's design and 'approach' to figure out the cause of the problem(s)? Established criteria for acceptability of approaches will minimize the back-and-forth in MRP Plan development. There should also be some understanding or statement about the need for coalitions to continue to monitor according to the existing Program MRP and according to staff direction while MRP Plan approval is in progress.

- In addition to the milestones mentioned above, will there be specific timelines, and performance measures for addressing the problems when they are found? There needs to be a way to close the loop on cycles of exceedances and approach reviews.

- The problem statement behind this approach is predicated on the problem statement that lab turnaround time is 30 days or more. However, bacteria samples are similar to toxicity tests in their short hold time and analysis time and do not really compare with the concerns that do exist for pesticide or metal turnaround times. Perhaps the TIC should propose a different approach for all analyses that do have shorter turnarounds, like some nutrients, e-coli or fecal coliform, much as they have done for toxicity test results?

3. **RECOMMENDATION #3 – Follow-up Sampling for Water Quality Exceedances of Field Parameters**. Language in the MRP should state: "The Coalition shall include a follow-up approach to address exceedances of receiving water limitation or water quality objectives for field pH and dissolved oxygen data in their MRP and shall implement the approach via the methods and within the timeline outlined in the Coalition MRP Plan approved by the Executive Officer of the Central Valley Water Board. The Coalition will continue implementing their follow-up approach until a source or sources of the water quality exceedance is identified via the methods and frequency proposed in the Coalition MRP. A definition of source or sources must be provided in the Coalition MRP, which may include, but is not limited to, an agricultural practice, upstream identification, non-farm related activities or natural conditions. The results of field measurements, in conjunction with analytical chemistry results and site observations, should be collectively considered to provide a 'weight of evidence' approach toward identifying the source.'

Staff Comments and Questions:
- Can the TIC develop criteria for evaluation of a coalition's design and 'approach' to figure out the cause of the problem(s)? Established criteria for acceptability of approaches will minimize the back-and-forth in MRP Plan development. There should also be some statement about the Coalition's need to adhere to their existing MRP and continue to monitor according to the existing

Program MRP and according to staff direction while MRP Plan approval is in progress.

- In addition to the milestones mentioned above, will there be specific timelines, and performance measures for addressing the problems when they are found? There needs to be a way to close the loop on cycles of exceedances and approach review.

- The sentence about providing a definition of source or sources in the MRP is not clear. Does this mean that the Regional Board staff must identify all potential sources for field parameter exceedances and include this in the MRP? Can the TIC provide clarification on the intent behind this language, and exactly what should be included in the MRP based on this?

- Does the TIC understand the required response to exceedances for pH, dissolved oxygen and conductivity to be a technical issue or a policy issue?

- Can the TIC recommend additional monitoring that will help identify the contaminants that could be causing the DO or pH exceedance?

4. RECOMMENDATION #4 – Triggers for Storm Water Monitoring - Language in the MRP should state: "Coalition Group must identify the monitoring frequency and measuring parameters that will be used to evaluate storm event runoff. Table XX (Alternatives Table) provides some suggestions for a monitoring frequency framework that could be used to meet the storm event monitoring objective, such as sampling at first flush, and next storm after agriculture practices occur. This may include developing a routine for monthly monitoring that will occur year round, 12 months of the year. If this routine monthly monitoring is utilized, then during storm seasons, the monthly monitoring will be tied to the first storm event that month. If no storm event occurs, the monthly monitoring shall take place at the end of the month. Regardless of approach proposed by the Coalition, significant justification and rationale for the approach must be provided in the Coalition MRP Plan and be approved by the Executive Officer of the Central Valley Water Board. Regardless, photo monitoring must occur during all sampling events, including sampling events that are aborted, due to lack of flow, or dangerously excessive flows. The Coalitions Groups must propose their monitoring schedule that is suited to the individual characteristics, topography, soils, etc.) in their MRP Plan.

Staff Comments and Questions:

- Monthly sampling throughout the year is a good idea for many reasons, but shouldn't toxicity, pesticides, and metals be collected at the same frequency as any other measurement?

- How can the Water Board be assured that Coalitions will collect samples during the storm season that adequately represent storm water runoff? Should sample collection dates be flexible to allow for changes in plans based on storm events?
- The pre-determined sampling would be a good idea especially if monitoring for toxicity and pesticides is at a higher frequency that is tied to the application of dormant spray, weed control and other applications. This would ensure that monitoring is conducted for situations that are neither storm event driven, nor irrigation season driven. One example of this is the farm practice of flooding citrus orchards to avoid frost damage, which is also the time of year that dormant spray application occurs. Using a literal interpretation of the current MRP language, rather than one that addresses the intent of the program, no monitoring occurs during this period of high risk to water quality.

- If a site is dry or not flowing at the time of the first visit, shouldn't additional attempts be made to collect a sample from the site later in the month? How can coalitions ensure that samples are collected once water flow occurs?

- Digital photo monitoring should always be conducted and included in the monitoring reports. Perhaps digital photos should also be included with the Exceedance and Communication Reports and as needed to document lack of runoff.

- To meet the objective, shouldn't the timing and location of monitoring be tied to agricultural practices for different crops, rather than one of the alternatives -- picking two runoff events for all sites within the coalition boundaries during the storm season?

- Shouldn't storm event monitoring should be for the event and capture the storm hydrograph for that site? It might be better to stick with event-based sampling in order to ensure that you are capturing peak storm events rather than sampling at some routine frequency?

- The language speaks about the coalitions providing 'significant justification and rationale', but the term 'significant' is not defined. Can clarification be made for 'significant'? Perhaps the TIC can develop some criteria that would help determine if the justification is significant and appropriate.

- Can Table XX be more fully filled-out by the TIC and also be provided in the text of this recommendation?

- If runoff is not sufficient to collect a sample, or if the site is not safe for sample collection during storm events, then the recommended approach should be to select a different monitoring site.

5. RECOMMENDATION #5 – Follow up Monitoring for Toxicity Exceedances (Source Identification). Language in the MRP should state: " the Coalition shall include a follow-up approach to address toxicity exceedances in their MRP Plan, and shall implement the approach via the methods and within the timeline outlined in the individual Coalition MRP Plan approved by the Executive Officer of the Central Valley Water Board. The Coalition will continue implementing their follow-up approach until a source or sources of the toxicity exceedance is identified via the methods and frequency proposed in the Coalition MRP. A definition of source or sources must be provided in the Coalition MRP, which may include, but is not limited to, an agricultural practice, upstream identification, non-farm related activities, or natural conditions."

Staff Comments and Questions:

- This recommendation is general and in the absence of more specifics there will obviously be comments made by Water Board staff when an MRP Plan is submitted. Without those specifics it is difficult to comment on this recommendation. Can the TIC help with some examples regarding what has been done to address source identification for toxicity exceedances?

- Aren't the monitoring sites selected so that they represent agriculture discharges and do not have multiple non-farm related activities? If multiple toxicity events are occurring from difference causes, then perhaps a more robust monitoring plan is necessary.

6. SEDIMENT RECOMMENDATION #1 – Follow-up Activities after Sediment Toxicity is Observed – Language in the MRP should state: "Sediment samples that show "statistically significant" toxicity at the end of an acceptable test and that exhibit a $\geq$20% reduction in organism survival compared to the control will require chemical analysis of the same sample in an effort to determine the possible cause of toxicity. When sediment samples are collected for toxicity analysis, additional sample volume sufficient for the recommended chemical and physical analyses must be collected, in the event that the sample exhibits toxicity. This additional sample volume must be held in frozen storage, until the results of the toxicity analysis are available. If the sample is not toxic to the test species, the additional sample volume can be discarded. If the toxicity criterion described above is exceeded, then the additional sample volume must be analyzed for Bifenthrin, Cyfluthrin, Lambda-Cyhalothrin, Cypermethrin, Deltamethrin, Esfenvalerate, Fenpropathrin, Permethrin, and Chlorpyrifos. Analysis at practical reporting limits of 1 μg/kg on a dry weight basis for each pesticide is required to allow comparison to established lethal concentrations of these chemicals to the test species. Additionally, the sample must be analyzed for total organic carbon (TOC) and grain size. Analysis for TOC is necessary to evaluate the expected magnitude of toxicity to the test species."

Staff Comments and Questions:
These recommendations are pertinent only to follow-up activities when the species *hyalella azteca* is used for the toxicity test. What are the appropriate steps to take if *chironomus tentans* is used by a coalition? Similarly, is the list of pyrethroids identified in this recommendation the only pyrethroids used by agriculture, or are they the primary ones?

- The title uses the terminology 'follow-up activities', but only address pesticide analyses, and does not say anything about resampling, or upstream monitoring for source identification. It also does not talk about the timing of the analytical chemistry follow-up Will those issues be addressed by the TIC?

- If the sample proves to be toxic and the pesticide suite does not adequately answer the question as to the cause of the toxicity, what steps should be taken after that? Should the frozen sediment sample be kept longer so that decisions could be made about how to determine the cause of the toxicity?

- If the toxicity remains unexplained after the chemistry analyses then language should be included to state that additional testing may be requested at the Executive Officers' discretion?

- It is unclear if the TOC and Grain size will be run on the original sample, every sample, or if it is only on the frozen, stored sample. If the intent is to only run the grain size and TOC if there is toxicity observed in the sample then the grain size sample must be kept in a separate container from the TOC and chemical sample and cannot be frozen. Can this be clarified in the recommendation?

- Should there be some language about the tests results meeting acceptability criteria?